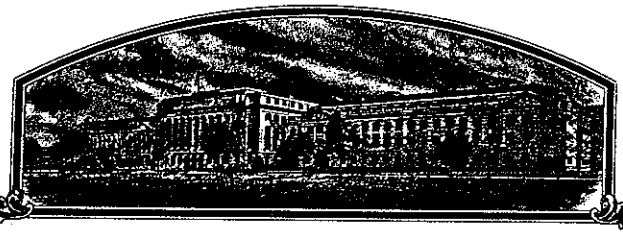

No. 8700184

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A4393'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 30th day of June in the year of our Lord one thousand nine hundred and eighty-eight.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

APPROVAL EXPIRES 2-28-88

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
Asgrow Seed Company	XP4282	A4393

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*	5. PHONE *(Include area code)*	FOR OFFICIAL USE ONLY
9620-190-25 Gull Road, Bldg. 190 Kalamazoo, MI 49001	(616) 385-6605	PVPO NUMBER 8700184

6. GENUS AND SPECIES NAME	7. FAMILY NAME *(Botanical)*	FILING
Glycine max	Leguminose	DATE: August 11, 1987 TIME: 9:30 [✓] A.M. [ ] P.M.

8. KIND NAME	9. DATE OF DETERMINATION	FEES RECEIVED
Soybean	October, 1982	AMOUNT FOR FILING: $ 1800 00 DATE: July 20, 1987 AMOUNT FOR CERTIFICATE: $ 200 00 DATE: April 28, 1988

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*

Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION
Delaware	March 22, 1968

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

John Batcha
9620-190-25
Asgrow Seed Company
Gull Road, Bldg. 190 - Kalamazoo, MI 49001 PHONE *(Include area code)*: (616) 385-6605

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. [X] Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. [X] Exhibit B, Novelty Statement.
c. [X] Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. [X] Exhibit D, Additional Description of Variety.
e. [X] Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* [ ] Yes *(If "Yes," answer items 16 and 17 below)* [X] No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [ ] Yes [ ] No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? [ ] Foundation [ ] Registered [ ] Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
[ ] Yes *(If "Yes," give date)*
[X] No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
[ ] Yes *(If "Yes," give names of countries and dates)*
[X] No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT	DATE
John a. Batcha	July 13, 1987
SIGNATURE OF APPLICANT	DATE

1

FORM LS-470 (3-86) *Edition of 7-84 obsolete.*

Asgrow Seed Company
PVP Application A4393 Soybean
April 6, 1987

EXHIBIT A

Origin and Breeding History of A4393

1978 - Cross was made at Oxford, Indiana

PARENTS: XP4136 * Elf (XP4136 = Williams * Essex)

1978-79 - The F_1 and F_2 generations were grown at Delray Beach, Florida.

1979 - The F_3 generation was grown at Oxford, Indiana and pod-picked.

1980 - The F_4 Generation was grown at Oxford, Indiana and pod-picked.

1981 - The F_5 generation was grown at Oxford, Indiana. Two-hundred plants were selected from the bulk population and thrashed individually.

1982 - Progeny row B78454-B82-09482 was selected for its uniformity and standability at Oxford, Indiana. This row was harvested in bulk and seeds were checked and verified for uniform seed coat luster and hilum color.

It was in October, 1982, that B78454-B82-09482 was determined to be a stable and unique line.

1983 - B78454-B82-09482was entered in the preliminary P425 Yield Tests conducted at Oxford, Indiana and Stonington, Illinois. It produced uniform stands and was selected for its very high yield, standability and good plant health.

1984 - Because of its excellent yield potential, B78454-B82-09482 was put into the S402, an advanced yield trial grown at seven locations including the states of Indiana, Illinois and Maryland. Because of its superior yield, it was selected for further yield testing and breeder seed purification was begun.

1985 - B78454-B82-09482 was grown in advanced yield tests at nine locations in Indiana, Illinois, Missouri and Maryland, and again had consistently high yields. It was given the experimental designation XP4282. 40 pounds of pure breeders seed was sent to Puerto Rico for a Basic I winter increase.

1986 – XP4282 was grown in 5 different advanced yield trials at 14 different locations in Indiana, Illinois, Iowa, Maryland and Kentucky. Performance was again consistently superior, so XP4282 was nominated for release and full production and assigned the designation A4393.

750 units of foundation seed were produced at Perry, Iowa from the Basic I seed.

Replicated trial evaluations since 1983 indicate A4393 is uniform and stable. As with other soybean varieties, variants can occur for almost any characteristic during the course of repeated sexual production.

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Asgrow Seed Company
PVP Aplication A4393 Soybean
April 6, 1987

EXHIBIT B

Novelty Statement Concerning A4393

To our knowledge the soybean varieties that most closely resemble A4393 are A4271, A4595, Union, Pioneer P9441, FFR441, AP4321, CX415, Mitchell and NK-S42-40. Characteristics which differentiate A4393 include, but are not necessarily restricted to, the following:

		1. Flower Color	2. Pubescence Color	3. Hilum Color	4. Pod Wall Color	5. PRR*	Peroxiduse
A4393	=	Purple	Tawny	Black	Tan	rps	Low
A4271	=	White	Tawny	Black	Tan	rps	High
A4595	=	White	Tawny	Black	Tan	Rps1a	High
UNION	=	White	Tawny	Black	Tan	Rps1a	?
Pioneer P9441	=	White	Tawny	Black	Tan	rps	?
FFR441	=	White	Tawny	Black	Tan	rps	?
AP4321	=	Purple	Tawny	Black	Brown	rps	?
CX415	=	White	Tawny	Black	Tan	Rps1c	?
Mitchell	=	Purple	Tawny	Brown	Tan	rps	?
NK-S42-40	=	Purple	Tawny	Black	Tan	rps	High

* = Gene for resistance fo Phytophthora megasperma Drechs. f. sp. glycinea:

Asgrow Seed Company
PVP Application Soybean A4393
April, 1987

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.*)*

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Asgrow Seed Company		A4393

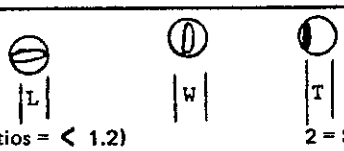
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
9620-190-25
Gull Road, Bldg. 190
Kalamazoo, MI 49001

FOR OFFICIAL USE ONLY
PVPO NUMBER
8700184

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]).

1. SEED SHAPE:

[1]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[3] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17') 3 = Intermediate

4. SEED SIZE: (Mature Seed)

[1][6] Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

[1] 1 = Low 2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

9. HYPOCOTYL COLOR:

[4] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

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8700184

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

13. FLOWER COLOR:

[2] 1 = White 2 = Purple 3 = White with purple throat

14. POD COLOR:

[1] 1 = Tan 2 = Brown 3 = Black

15. PLANT PUBESCENCE COLOR:

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[3] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

17. PLANT HABIT:

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

[0][7] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

[0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

[0] Bacterial Blight *(Pseudomonas glycinea)*

[0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

[0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

[0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

[0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

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19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

[0] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

[1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [1] Race 5 [0] Race 6 [1] Race 7

[1] Race 8 [1] Race 9 [1] Other *(Specify)* Races 13, 16, 17, 21

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

[0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

[0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

[0] Race 1 [0] Race 2 [1] Race 3 [1] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

[0] Southern Root Knot Nematode *(Meloidogyne incognita)*

[0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify):* _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A3966	Seed Coat Luster	BSR 302
Leaf Shape	A3966	Seed Size	A4595
Leaf Color	A4271	Seed Shape	A3427
Leaf Size	A3966	Seedling Pigmentation	Ripley

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
A4393 Submitted	140	2.2	104					15.6	
A4271 Name of Similar Variety	138	2.1	104					15.8	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Asgrow Seed Company
PVP Application A4393 Soybean
April 6, 1987

EXHIBIT D

Additional Description of the Variety

A4393 is an early Maturity Group IV soybean variety that possesses superior and consistent yields relative to other varieties of similar maturity. A4393 combines this high yield potential with good emergence and standability. A4393 has also shown resistance to shattering and good overall plant health.

A4393's consistent yield potential and superior agronomic appearance will give farmers a superior variety compared to many widely grown early Group IV varieties.

EXHIBIT E

Statement of the Basis of Applicant's Ownership

A4393 was originated and developed by Dale Weigelt, Asgrow Plant Breeder. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.